OCEAN GALES AND STORMS, SEPTEMBER 1937

Vessel	Voyage		Position at time of lowest barometer		Gale began September	Time of lowest barometer September—	Gale ended September—	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN			° ′	° ′				*Inches*					
Black Eagle, Am. S. S.	New York	Antwerp	47 39 N.	32 07 W.	1	Noon, 1	2	30.02	NW	NW, 7	WNW	NW, 8	
Scanmail, Am. S. S.	Copenhagen	New York	54 00 N.	36 12 W.	1	10p, 1	1	[1]29.74	NW	NW, 8	NW	NW, 10	None.
Berlin, Ger. S. S.	Bremerhaven	do	52 09 N.	30 30 W.	5	Noon, 5	5	29.54	WSW	WSW, 8	NW	WSW, 8	WSW-NW.
Tulsa, Am. S. S.	Charleston	Liverpool	46 04 N.	39 40 W.	6	5p, 7	9	29.77	NE	S, 8	S	S, 8	ENE-S-SW
Mercier, Belg. S. S.	New York	Antwerp	49 39 N.	5 51 W.	9	8p, 9	9	30.00	W	NNE, 8	NNE	NNE, 8	W-NNE.
Leto, Du. S. S.	Rotterdam	Wabana	48 23 N.	46 55 W.	9	8p, 9	10	29.67	W	S, 7	NW	NW, 10	S-NW.
Winamac, Br. S. S.	Aruba	Gibraltar	21 30 N.	57 12 W.	9	10a, 10	11	29.39	NNE	NNE, 10	SE	NNE, 10	NNE-SSW.
Telamon, Du. S. S.	Amsterdam	Arecibo	24 21 N.	57 16 W.	10	6p, 10	11	29.68	ESE	ESE, 8	WSW	ESE, 8	None.
West Madaket, Am. S. S.	Mobile	London	38 04 N.	66 33 W.	10	4a, 11	11	29.71	ENE	SE, 8	SSW	SE, 8	E-S.
Coppename, Am. S. S.	Boston	Guantanamo	36 24 N.	70 51 W.	11	Noon, 11	11	29.19	E	W, 10	W	W, 10	SE-W.
Zarembo, Am. S. S.	New York	Tenerife	39 30 N.	67 18 W.	10	4p, 11	12	29.52	ESE	SSW, 10	SW	SSW, 10	SSE-SSW-SSE.
American Trader, Am. S. S.	do	London	40 20 N.	67 35 W.	11	9p, 11	11	29.11	SE	SSW, 10	SW	S, 10	SE-SW.
Spaarndam, Du. S. S.	Rotterdam	New York	41 37 N.	66 10 W.	11	10p, 11	12	29.33	SSE	SSE, 9	SW	SSE, 9	SSE-SW.
Cadillac, Br. S. S.	Newcastle	Baytown, Tex.	33 50 N.	63 20 W.	12	2a, 13	13	29.30	ENE	N, 9	W	N, 9	NE-N-W.
Laurent Meeus, Belg. M. S.	Houston	Amsterdam	38 55 N.	62 20 W.	13	2p, 13	14	29.91	ESE	SSE, 8	SSE	SSE, 9	ESE-SSE.
Cyrus Field, Br. S. S.	Vera Cruz	Halifax	42 50 N.	65 48 W.	14	5a, 14	14	29.30	ENE	NNW, 7	SSW	NE, 8	NE-NW.
Tennessee, Dan. S. S.	South Shields	New York	56 40 N.	24 17 W.	14	5p, 14	16	29.53	WNW	WNW	WNW	NW, 11	WNW-NW.
De Grasse, Fr. S. S.	Cobh	Boston	51 18 N.	11 00 W.	16	7a, 16	17	28.83	W	NW, 9	NW	NW, 9	None.
Bremen, Ger. S. S.	Cherbourg	New York	49 41 N.	11 14 W.	16	10, a, 16	17	28.93	NW	NW, 9	NNW	NW, 10	W-NW.
Europa, Ger. S. S.	New York	Cherbourg	49 08 N.	2 50 W.	16	8a, 17	17	[1]29.00	NW	S, 6	SSE	NNW, 10	
City of Alma, Am. S. S.	Mobile	Liverpool	51 00 N.	15 45 W.	15	11a, 17	18	29.57	WNW	NNW, 4	NW	WNW, 9	None.
Motocarline, Pan. M. S.	Nyborg	Aruba	[1]30 32 N.	46 29 W.	17	1a, 18	18	29.82	SE	S, 9	S	S, 9	S-SSW.
Otho, Am. S. S.	St. Vincent, C. V. I.	Boston	34 14 N.	50 02 W.	17	5a, 18	18	28.54	S	NNW, 12	W	ESE, 12	E-NNW-W.
Oropesa, Br. S. S.	La Pallice	Bermuda	[1]35 27 N.	47 55 W.	18	9a, 18	18	29.53	SE	SE, 11	SSE	SE, 12	SE-SSE.
Maria, Ital. M. S.	Gibraltar	New York	37 38 N.	45 35 W.	18	Noon, 18	19	29.92	SSE	SSE, 6	SW	S, 9	SSE-SW.
Lubrafol, Belg. M. S.	London	Port Arthur	[1]36 37 N.	46 43 W.	18	4p, 18	18	29.80	SE	S, 9	SW	S, 9	SSE-SW.
De Grasse, Fr. S. S.	Cobh	Boston	46 42 N.	40 24 W.	19	11a, 19	20	29.30	SSE	SSE, 10	WSW	SSE, 10	SSE-S.
Minnequa, Am. S. S.	Gdynia	Baltimore	52 20 N.	40 53 W.	20	1a, 20	20	29.14	W	N, 8	W	W, 8	NNE-NNW.
Scanstates, Am. S. S.	Copehagen	New York	56 16 N.	24 12 W.	20	3a, 21	21	28.83	S	S, 8	NW	NW, 9	S-NW.
Marigot, Fr. S. S.	Falmouth	Guadeloupe	[1]22 24 N.	52 41 W.	21	2a, 22	22	[1]29.19	SE	NW, 10	W	N, 10	NE-N-W.
San Antonio, Fr. S. S.	Curacao	Havre	[1]28 03 N.	54 31 W.	22	8p, 23	24	29.30	NNE	NE, 9	SSW	ENE, 10	E N E- N N E-NW.
Black Hawk, Am. S. S.	Rotterdam	New York	51 17 N.	24 07 W.	26	8p, 25	26	29.60	W	W, 4	N	NW, 8	SW-W.
Ogontz, Am. S. S.	Galveston	Montreal	41 36 N.	66 19 W.	25	Mdt, 25	26	29.36	NE	NNW, 9	W	NNW, 9	N-W.
Victolite, Br. M. S.	Guiria	Halifax	[1]42 24 N.	63 12 W.	25	2a, 26	26	28.71	NE	SE, 10	WSW	NE, 11	E-S.
Europa, Ger. S. S.	Cherbourg	New York	42 15 N.	59 54 W.	26	Noon, 26	26	[1]29.60	S	SW, 10	SW	SSW, 10	SSW-SW.
El Almirante, Am. S. S.	New Orleans	do	24 24 N.	81 30 W.	29	7p, 27	30	29.88	NE	NE, 4	NE	NE, 8	E-NE.
Standard Arrow, Am. S. S.	Beaumont	Paulsboro	28 20 N.	79 43 W.	28	4p, 28	30	30.04	NE	NE, 6	NE	NE, 8	Steady.
S. B. Hunt, Am. S. S.	Port Arthur	Providence	24 36 N.	80 24 W.	29	6p, 28	29	29.95	NNE	NE, 6	NE	NNE, 8	
Seminole, Am. S. S.	Galveston	Miami	[1]26 44 N.	87 30 W.	30	[2]2a, 1	[2]1	29.70	NNE	NE, 7	SE	NE, 8	NE-SE.
NORTH PACIFIC OCEAN													
President Jefferson, Am. S. S.	Yokohama	Victoria, B. C.	[1]50 00 N.	166 23 W.	2	10p, 2	3	29.82	SSE	SSE, 8	SSE	SSE, 9	
President Jackson, Am. S. S.	Seattle	Yokohama	50 48 N.	174 55 W.	1	Mdt, 2	2	29.52	SE	SSW, 7	S	SSE, 10	S-SSW-W.
Kekoskee, Am. S. S.	Los Angeles	Balboa	18 15 N.	103 45 W.	9	4a, 9	9	29.76	E	ESE, 5	SE	E, 8	ESE-E.
Steel Engineer, Am. S. S.	Longview, Wash.	do	19 48 N.	106 00 W.	9	4a, 10	10	29.76	SE	SE, 9	ESE	SE, 9	None.
San Lucas, Am. S. S.	Balboa	San Diego	[1]22 09 N.	109 05 W.	9	3p, 10	13	29.52	E	E, 7	SE	E, 10	
Bengal Maru, Jap. S. S.	Los Angeles	Balboa	24 12 N.	112 13 W.	11	2p, 11	11	29.74	E	SE, 8	SSE	ESE, 8	
Talthybius, Br. S. S.	Seattle	Yokohama	52 04 N.	144 08 W.	11	4a, 12	12	29.48	SSW	S, 7	SSW	S, 10	S-W.
San Pedro Maru, Jap. M. S.	Los Angeles	Kobe	38 12 N.	144 15 E.	12	8a, 12	12	29.49	SSE	S, 9	SW	S, 9	SSE-SSW.
Hikawa Maru, Jap. M. S.	Yokohama	Vancouver	50 05 N.	173 26 W.	13	8p, 14	16	28.87	SSE	SW, 8	SW	SE, 8	SSW-WSW.
Nankai Maru, Jap. M. S.	do	San Francisco	45 12 N.	178 24 E.	15	Mdt, 15	15	29.51	W	W, 8	W	W, 8	
Empress of Japan, Br.	Honolulu	Yokohama	34 21 N.	158 41 E.	16	4a, 16	16	29.86	ENE	ENE, 7	NE	NE, 8	N-ENE.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, September 1937, at selected stations*

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Point Barrow	29.82	−0.08	30.38	29	29.20	16
Dutch Harbor	29.73	−.03	30.44	26	28.72	15
St. Paul	29.78	+.07	30.48	26, 28	28.82	15
Kodiak	29.81	+.10	30.44	27	28.96	10
Juneau	30.03	+.11	30.33	27	29.64	29
Tatoosh Island	30.06	+.06	30.51	24	29.48	30
San Francisco	29.94	.00	30.12	24	29.80	20
Mazatlan	29.85	+.03	29.92	23	29.74	17
Honolulu	30.02	+.02	30.11	1	29.91	26
Midway Island	30.02	+.01	30.18	7	29.84	26
Guam	29.86	+.03	29.92	8, 10	29.82	6
Manila	29.80	+.03	29.86	12, 13, 18, 19	29.62	10
Hong Kong	29.83	+.06	29.96	29	28.30	2
Naha	29.86	+.10	30.00	19, 20, 28, 29	29.32	9
Chichishima	29.96	+.10	30.18	3, 15	29.71	24

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Extratropical cyclones and gales.—Several cyclonic disturbances occurred in high latitudes of the north Pacific during September. Barometer readings below 29 inches were recorded at Kodiak on the 10th; on board the Japanese motorship *Hikawa Maru*, near latitude 50° N., longitude 173½° W., on the 14th; and at Dutch Harbor and other nearby points on the 15th. The highest local winds reported in the vicinity of the storm areas on these dates, however, did not exceed force 8. The strongest winds experienced by reporting ships in northern waters were of force 10. One was reported by the American steamer *President Jackson*, on the 2d, a short distance south of the central Aleutians; the other, by the British steamer *Talthybius* on the 12th, near 52° N., 144° W.; both were accompanied by barometric minima of about 29.50 inches.

Gales of forces 8 to 10 were local in connection with all high latitude disturbances, and, so far as indicated by ships' mail and radio observations, occurred in scattered localities on only 10 or 12 days.

Most of the cyclones were irregular in movement. One, however, can be traced from a position east of northern Japan on the 17th, until it entered Alaska on the 24th. It appeared to have little intensity; the only gales worthy of mention within its field occurred on the 19th, of force 9, to the southwestward of the western Aleutians.

The only gale reported in coastal waters of the United States was of force 8, from north-northeast, experienced by the American steamer *Texas*, near Point Arena, Calif., on the 20th.

On the 29th and 30th a storm area of moderate intensity lay off the coasts of Washington and British Columbia. In connection with it, a gale of force 8 was reported by radio north of Queen Charlotte Island on the 29th. Similar reports on the 30th showed that winds of like force were blowing at a considerable distance to the southward, one being as far south as 45½° N., 132° W.

Tropical cyclones—Typhoons.—A very mild disturbance west of Mexico appeared near 15° N., 102° W. on September 1 and, moving northwest, disappeared on the 3d near the Revillagigedo Islands. No high winds were reported in connection with this disturbance.

During the 9th to 11th a cyclone of considerable intensity moved from a location about west of Acapulco northwestward past the mouth of the Gulf of California, and disintegrated at some distance west of southern Lower California. The earliest gale in connection with the disturbance was from the east, force 8, barometer 29.76, met by the American steamer *Kekoskee*, near 18° N., 104° W., on the 9th. At 4 a. m. of the 10th, in 19°48′ N., 106° W., the American steamer *Steel Engineer* had a southeast gale of force 9, barometer 29.76. Later in the day, a short distance south of Cape San Lucas, the American steamer *San Lucas* encountered the strongest wind, from the east of force 10, and the lowest barometer, 29.52, observed in connection with the storm. The highest wind reported on the 11th was of force 8, from the east-southeast, experienced at 2 p. m. on the Japanese steamer *Bengal Maru*, in 24°12′ N., 112°13′ W.

Disturbed conditions lay over and in the vicinity of the Gulf of California on the 16th to 20th, but cyclonic development was immature. The highest wind reported during the period was of force 7, from south-southeast, near 20° N., 107° W., met by the Dutch steamer *Delftdyk* barometer 29.64.

In the Far East much more serious cyclonic storms occurred, in particular the intense typhoons that ravaged Hong Kong on September 2 and southern Japan on September 11. These and other tropical cyclones of the month are described elsewhere in this issue of the REVIEW by the Rev. Bernard F. Doucette, S. J., of the Manila Observatory, Philippine Weather Bureau. The only note that may be added in connection with the Japanese typhoon is that one of our observing vessels, the Japanese motorship *San Pedro Maru*, while near 38° N., 144° E., on the 12th, experienced a south gale of force 9, barometer 29.49, as the storm entered the open Pacific from northern Honshu.

Fog.—There was a considerable decrease in the September occurrence of fog over that of the preceding month along the northern steamer routes. Between the Aleutian Islands and Japan practically all the fog reported was observed, rather scattered, on the 5th to 9th. From northern midocean eastward to longitude 130° W., there were 12 days reported with fog, scattered along the route, and occurring on not more than 5 days in any one 5-degree square. No fog was reported by ships along the Washington and Oregon coasts, but along the California coast it occurred on at least 12 days, and off Lower California on 2 days. Fog was observed on the 2d southwest of the Revillagigedo Islands.

TYPHOONS AND DEPRESSIONS OVER THE FAR EAST, SEPTEMBER 1937

Rev. BERNARD F. DOUCETTE, S. J.

[Weather Bureau, Manila, P. I.]

Typhoon August 24–September 3, 1937.—From August 24 to 30, as this storm moved west-northwest across the Pacific from a position about 200 miles south of Guam, there was little evidence of its potentialities. During the afternoon of August 28, the U. S. S. *Ramapo* experienced a shifting of winds that indicated the passage of the center a short distance south of the ship's position. It is possible that for some hours the center did shift its course in that way, but the next day found it moving along a west-northwest course. The lowest barometer reading on board the U. S. S. *Ramapo* was 29.61 inches at 4 p. m. August 28 (Manila time). The wind was coming from the north-northwest, velocity 33 knots, the ship being near latitude 13°4′ N., longitude 131°7′ E. (the position